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# Department of Defense's Need To Become a Responsible Commercial Customer

**By Lt. Col. Patrick H. Rayermann,
Chief, Space Operations at DISA**

One of the most important challenges facing the military and civilian leadership of the Department of Defense (DoD) today is how to put into effective practice the reliance DoD has placed upon the commercial Space industry. What often seems underappreciated is that, while the Department's leaders have consistently determined over the past decade to plan on filling a growing share of DoD's requirements for communications, imagery, and weather from commercial systems, the Department has not followed these decisions with the commitment and actions that will assure the availability of the commercial capabilities upon which it now relies.

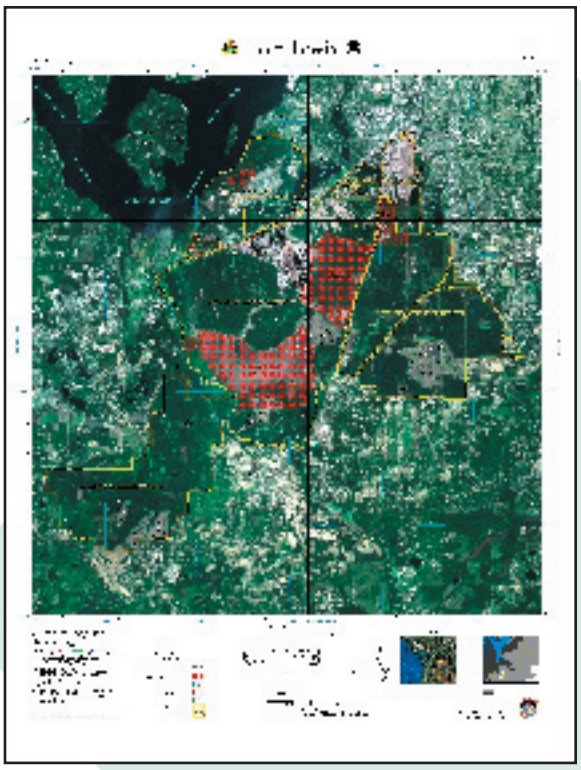
Although the degree of reliance on commercial capabilities varies for communications, imagery, and weather information, any of these areas can be viewed as qualitatively representing all three. [As the Chief, Defense Systems Information Agency Space Operations with responsibility for supervising the Commercial Satellite Command Service Office that is charged with providing wideband commercial satellite communications (SATCOM) to DoD (and other Government) users.] I am most familiar with how DoD's current practices constrain its ability to maximize the support it obtains from commercial SATCOM systems. This specific set of challenges is therefore what I will examine.

## Commercial SATCOM and DoD Today

In 1997 the military's senior communications leaders met in a series of meetings at the Senior Warfighters' Forum. This forum reviewed current and projected DoD requirements for SATCOM and concluded that the projected military systems would be unable to keep pace with the projected growth in demand. Consistent with a 1993 Congressionally mandated initiative known as the "Commercial Satellite Communications Initiative," they chose to rely on commercial wideband (C, Ku, and Ka bands) satellite communications to augment the military systems to meet the Department's total SATCOM requirements.

What is not often discussed is that this decision was made from the perspective of total infrastructure: the Department's senior communicators looked at total demand and at total forecast military satellite communication (MILSATCOM) capabilities and directed that the difference between the two would be provided by commercial SATCOM systems. This decision committed DoD to make wideband commercial SATCOM a part of DoD's total communications infrastructure, also known today as the "Global Information Grid" or DoD's "Infostructure."[1,2] However, to date, the Department has not invested in the commercial portion of its SATCOM infrastructure on an infrastructure basis.

Instead, the Department relies on individual elements — in some cases down to the squadron or battalion level — to budget for and provide the funding necessary to lease the commercial SATCOM bandwidth those elements require. Additionally, the paradigm adopted by the Department means that users of commercial SATCOM are discouraged from entering into leases for periods of greater than one-year. Of the military services, the Navy has been the sole one



**A typical multi-spectral imagery product produced by Army Space Command.**

to lease commercial SATCOM on a broad, service-wide basis under its Challenge Athena program. Effectively, this means that the Department leases the commercial SATCOM it needs on a piecemeal, as-needed and as-can-be-funded basis. This is essentially a circuit-based approach; it certainly does not reflect an infrastructure-based approach.

## The Problem

The result is a situation in which neither DoD nor the commercial SATCOM industry obtains from the other the maximum benefit. The commercial SATCOM industry operates on the basis of leasing at least 70 percent of its on-orbit capacity at any one time. Today, demand over most of the Earth is much greater: on a typical day, 95 to 98 percent of the capacity of the available on-orbit C- and Ku-band transponders is leased. For DoD customers, this means that finding the commercial SATCOM bandwidth they require, as and when they require it, can be difficult, untimely, and unaffordable.

The industry's leasing policy promotes long-term commitments. Leases typically are for five or more years and customers who know they have a long-term requirement often consummate 10- and 15-year leases. Reflecting this orientation, lease renewals are required six months in advance of the expiration of a lease. On 10-year leases, this poses a trivial amount of administrative overhead for both the satellite provider and the customer. For DoD customers with long-term (more than one-year) requirements, it means that three months after a lease period begins, they must begin working the processes within DoD to be able to renew their lease for another year.

SATCOM providers also structure their pricing to encourage/reward long-term commitments and compensate for capacity that has been lying unused by charging premium prices for it when short-term, low-bandwidth customers have a need to lease it. Savings on a 10-year lease versus a 1-year lease for a 36 MHz transponder are in the range of $800,000 per year — or around $8 million over the life of the lease! The net result is that, although DoD views commercial SATCOM as part of its global information infrastructure, its current investment approach to obtaining commercial SATCOM leaves it at risk of being unable to obtain the commercial capacity it requires and, in most cases, paying the greatest possible price for the bandwidth it can obtain.

The typical corporation with requirements for SATCOM charges its Chief Information Officer with "bundling" those requirements together into a total package and negotiating with satellite communications providers to obtain the best possible rate and the most favorable terms in exchange for a long-term commitment to lease an aggregate amount of SATCOM capacity. This may include in some cases, as with DoD, individual requirements that may be small (T1 or less) and spread across many portions of the globe.

## Prescription for the Future

What the Department of Defense needs to do is adopt the same sort of approach as used by the large corporate consumers of commercial SATCOM.

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First, we need to help individual customer organizations throughout DoD understand the benefits that will accrue to all DoD customers if we collect all of DoD's commercial SATCOM requirements together and intelligently lease the capacity to meet the Department's aggregate demand. Second, we must change the paradigm in place today within DoD that causes customers to lease commercial SATCOM capacity on what is effectively a "circuit-by-circuit" basis; we must persuade the Department that, as an essential part of DoD's communications infrastructure, commercial SATCOM should be funded and acquired centrally and adequately to meet most of the Department's peacetime and a portion of its projected contingency SATCOM requirements. Third, we must also further change DoD's paradigm for leasing commercial SATCOM so that we can enter into the long-term leases of 10 years or more that prove we are a serious customer to industry and that yield the benefits of cost savings to the military — and the American taxpayers. We need to get the most bandwidth for the bucks spent! Fourth, we must help the Department realize that the commercial SATCOM portion of its global information infrastructure should be consumed ahead of the MILSATCOM portion.

Commercial systems are optimized to provide coverage where paying customers are located. Military systems are optimized to be able to rapidly and agilely provide support at any location on the Earth where crisis of some sort arises. By employing commercial systems to meet a substantial portion of its routine requirements — the kind of requirements ideally suited to relatively unprotected commercial systems — our military will have sufficient capacity available on its MILSATCOM systems to meet surge requirements in the event of a contingency. This "surge" capability will then exist on the systems that are designed to have the capability to support forces at any location on the planet-whether there is normally a paying customer community or not.

An additional benefit in proceeding in this manner is that if DoD organizes its requirements for commercial SATCOM into an aggregated whole, leases capacity from industry on this basis, and enters into long-term (10 or more years) leases, then the commercial SATCOM industry will begin to perceive DoD as a serious, major customer. Both will benefit: DoD will have positioned itself to meet more of its SATCOM infrastructure requirements easily, responsively and affordably; industry will be able to count on DoD as a customer and size its constellations and on-orbit capacity accordingly. This last point is important because there is a real possibility that over the next 10 years the demand for long-haul, wideband SATCOM may dramatically diminish.[3] If DoD is not a regular, reliable, significant customer of the SATCOM industry — one whose needs the industry routinely plans on meeting — DoD may find as the next decade begins that there is no suitable commercial SATCOM capacity to lease.

Lt. Col. Patrick Rayerman, U.S. Army Signal Corp, is currently the Chief of Space Operations at the Defense Information Services Agency.

**Endnotes**

1 Lt. Gen. Woodward in his MILSATCOM 2001 presentation

2 Lt. Gen. Raduege in his Spring 2001 DISA Customer Conference presentation

3 Col Anhalt in his presentations to the USAF Science Advisory Board "Summer 2001" Study and the Via Satellite's SATCOM 2001 Industry Conference

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